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EXAMINER

EL CHANTI, HUSSEIN A

ART UNIT PAPER NUMBER

2157

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/846,380

Applicant(s)

KAMPE ET AL

Examiner

Hussein A. El-chanti

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6,8-12 and 14-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-12 and 14-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

**Response to Amendment**

1. This action is responsive amendment received on Nov. 11, 2005. Claims 1-6, 8-12 and 14-46 are pending examination.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 8-12 and 14-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Combs et al., U.S. Patent No. 6,766,348 (referred to hereafter as Combs).

Combs teaches the invention explicitly as claimed including a system and method for allocating resources to users using a fault tolerant resource allocator system (see abstract).

As to claim 1, Combs teaches a method for managing a plurality of high-availability-aware applications in a networked computer system comprising:

invoking a registration application programming interface by the plurality of high-availability-aware applications to be managed (see col. 4 lines 16-39, resource allocator includes a database to track the resource management and the assignment of each resource to users); and

invoking callback interfaces of registered applications to dynamically allocate, roles and assignments to one or more of registered applications of the plurality of high-availability-aware applications to achieve a desired redundancy level based on application type information (see col. 4 lines 1-39, the fault tolerant resource allocator execute API functions to update the status of resource allocations to users).

As to claim 2, Combs teaches the method of claim 1, further comprising:  
providing information through the application programming, interface to the registered applications so that related applications among the registered components may communicate to achieve the desired redundancy level (see col. 4 lines 1-39).

As to claim 3, Combs teaches the method of claim 2, further comprising:  
maintaining software release domain information, wherein the software release domain information is provided to the related applications during the providing step (see col. 4 lines 1-39).

As to claim 4, Combs teaches the method of claim 1, further comprising:  
performing administrative actions on the registered applications in response to a request from an external management agent (see col. 5 lines 35-col. 6 lines 15).

As to claim 5, Combs teaches the method of claim 1, further comprising:  
responding to an error by changing roles and assignments of the registered applications via the invocation of the callback interfaces of the registered applications (see col. 4 lines 1-39).

As to claim 6, Combs teaches the method of claim 5, further comprising:  
maintaining application relationship information, wherein the application relationship

information is used during the allocating step and the responding step (see col. 4 lines 1-39).

As to claim 8, Combs teaches the method of claim 5, wherein the responding step uses protection group information (see col. 10 lines 14-40).

As to claim 9, Combs teaches the method of claim 5, wherein the responding step further comprises: choosing an appropriate response; and altering assignments and roles of the registered applications according to the appropriate response (see col. 4 lines 1-39).

As to claim 10, Combs teaches the method of claim 9, wherein the appropriate response includes restart, fail-over, switch-over, node fail-over, and node switch-over (see col. 4 lines 1-39).

As to claim 11, Combs teaches the method of claim 1, wherein the roles allocated to the one or more of the registered applications include off-line, spare, primary, secondary, and quiescing (see col. 4 lines 1-39).

As to claim 12, Combs teaches the method of claim 1, further comprising: maintaining application relationship information, wherein the application relationship information is used during the allocating step (see col. 4 lines 1-39).

As to claim 14, Combs teaches the method of claim 1, wherein the allocating step uses protection group information (see col. 10 lines 10-40).

As to claim 15, Combs teaches the method of claim 1, wherein the allocating step assigns; a specific role and assignment to a self-determining application in the registered applications (see col. 9 lines 17-col. 10 lines 40).

As to claim 16, Combs teaches the method of claim 1, wherein the plurality of high-availability-aware applications include stand-alone applications proxied applications and proxy applications (see col. 9 lines 17-col. 10 lines 40).

As to claim 17, Combs teaches the method of claim 1, wherein the application type information includes functional attributes, recovery parameter attributes, application instance level attributes, and application assignment level attributes (see col. 9 lines 17-col. 10 lines 40).

As to claim 18, Combs teaches a method of allocating an assignment in a networked computer system comprising:

- registering a plurality of components applications through an application programming interface, wherein the plurality of applications are high-availability aware;
- allocating roles to registered applications of the plurality of applications by invoking a callback interface of registered applications,

- allocating the assignment to a first application selected from the registered applications based on application type information of the first component application by invoking a callback interface of the first application;

- changing a role of the first application to primary by invoking a callback interface of the first application;

- determining an application specific redundancy level based on the application type information;

- allocating the assignment to a predetermined number of secondary applications selected from the registered applications based on application type information of the

secondary applications wherein the predetermined number is based on the redundancy level of the application by invoking a callback interface of the secondary applications;

changing roles of the predetermined number of secondary applications to secondary by invoking a callback interface of the secondary applications; and

notifying the first newt application by invoking a callback interface of the first application about the predetermined number of secondary a applications and the predetermined number of secondary applications about the first application invoking a callback interface of the second applications (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 19, Combs teaches the method of claim 18, further comprising: detecting an error affecting the first application selecting a new primary application the predetermined number of secondary applications and changing a role of the new primary application to primary by invoking callback interface of the new Primary application (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 20, Combs teaches the method of claim 19, further comprising: instructing the first application, by invoking a callback interface of the first application, to communicate information to the new primary application (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 21, Combs teaches the method of claim 18, further comprising: detecting an error affecting the first application and restarting the first application (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 22, Combs teaches the method of claim 18, further comprising:  
maintaining software release domain information, wherein the software release domain information is included in the notifying step (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 23, Combs teaches the method of claim 18, further comprising:  
performing administrative actions on the registered applications in response to a request from an external management agent (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 24, Combs teaches the method of claim 18, further comprising:  
maintaining application relationship information; wherein the application relationship information is used in the two assignment allocating steps (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 25, Combs teaches a method of allocating an assignment to a plurality of high-availability-aware applications in a networked computer system,, the method comprising; registering the plurality of high-availability-aware applications through an application programming interface; allocating roles to registered applications of the plurality of high-availability-aware applications by invoking a callback Interface of the registered applications; maintaining application relationship information; selecting a first application from the registered applications based on application type information and the application relationship information; allocating the assignment to the first application by invoking a callback interface of the first application; changing a role of the first application to primary by invoking a callback interface of the first application;



determining a redundancy level based on the application type information; selecting a predetermined number of secondary applications from the registered applications based on application type information of the secondary applications and the application relationship information, wherein the predetermined number is based on the determined redundancy level; changing roles of the predetermined number of secondary applications secondary by invoking a callback interface of the secondary a applications and notifying the first application, by Invoking a callback Interface of the first application, about the predetermined number of secondary applications and the predetermined number of secondary applications, by invoking a callback interface of the secondary applications, about the first application component (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 26, Combs teaches the method of claim 25, further comprising:  
detecting an error affecting the first application;

selecting a new primary application from the predetermined number of secondary applications using the application relationship information; and changing a role of the new primary application to primary by invoking a callback interface of the new primary application (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 27, Combs teaches the method of claim 26, further comprising:  
instructing the first application to communicate information to the new primary application by invoking a callback interface of the first application (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 28, Combs teaches the method of claim 25, further comprising:  
maintaining software release domain information, wherein the software release domain information is included in the notifying step (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 29, Combs teaches the method of claim 25, further comprising:  
performing administrating actions on the registered applications in response to a request from an external management agent (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 30, Combs teaches a computer program product for managing a plurality of high-availability-aware applications in a networked computer system, the computer program product comprising:

computer readable program code configured to register the plurality of high-availability-aware applications sets to be managed by invoking a registration application programming interface;

computer readable program code configured to dynamically allocate roles and assignments to one or more registered applications of the plurality of high-availability-aware applications to achieve a desired redundancy level based on application type information by invoking a callback interface of the registered applications; and

a computer readable medium having the computer readable program codes embodied therein (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 31, Combs teaches the computer program product of claim 30, further comprising:

computer readable program code configured to provide information to the registered applications so that related applications may communicate to achieve the desired redundancy level (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 32, Combs teaches the computer program product of claim 30, further comprising computer readable program code configured to respond to an error by changing roles and assignments of one or more of the plurality of sees applications by invoking a callback interface of the registered applications (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 33, Combs teaches a computer readable medium configured to embody computer programming instructions for managing a plurality of high-availability-aware applications in a networked computer system, the computer programming instructions comprising:

registering the plurality of high-availability-aware applications to be managed through an application programming interface; and

dynamically allocating roles and assignments to registered applications of the plurality of high-availability-aware applications to achieve a desired redundancy level based on application type information by invoking a callback interface of the registered applications (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 34, Combs teaches a computer program product for allocating an assignment in a networked computer system, the computer program product comprising

computer readable program code configured to provide an application programming interface to register a plurality of high-availability-aware applications components;

computer readable program code configured to allocate roles to registered applications components of the plurality of high-availability-aware applications by invoking a callback interface of the registered applications;

computer readable program code configured to allocate the assignment to a first application n selected from the registered applications on application type information of the first application by invoking a callback interface of the first application; computer readable program code configured to change a role of the first application component to primary by invoking a callback interface of the first application;

computer readable program code configured to determine a redundancy level based on the application type information;

computer readable program code configured to allocate the assignment to a predetermined number of secondary applications selected from the registered applications components based on application type information of the secondary components, wherein the predetermined number is based on the redundancy level by invoking a callback interface of the secondary applications;

computer readable program code configured to change roles of the predetermined number of secondary applications secondary by invoking a callback interface of the second applications;

computer readable program code configured to notify the first application by invoking a callback interface of the first application about the predetermined number of

secondary applications sees and the predetermined number of secondary applications components about the first application by invoking a callback interface of the secondary applications; and

a computer readable medium having the computer readable program codes embodied therein (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 35, Combs teaches the computer program product of claim 34, further comprising:

computer readable program code configured to detect an error affecting the first: application

computer readable program code configured to select a new primary application the predetermined number of secondary applications components; and

computer readable program code configured to change a role of the new primary application to primary by invoking a callback interface of the new primary application (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 36, Combs teaches a system for managing a plurality of high-availability-aware applications a networked computer system, the system comprising:

means for registering the plurality of high-availability-aware applications be managed through an application programming interface; and

means for dynamically allocating roles and assignments to one or more of registered applications of the plurality of high-availability-aware applications to achieve a desired redundancy level based on application type information by invoking a callback

interface of the registered applications (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 37, Combs teaches the system of claim 36, further comprising:  
means for responding to an error by changing roles and assignments of one or more of the registered applications by invoking a callback interface (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 38, Combs teaches the system of claim 36, further comprising:  
means for providing information through the application programming interface to the registered applications so that related applications may communicate to achieve the desired redundancy level (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 39, Combs teaches the system of claim 36, further comprising:  
means for performing administrative actions on the registered applications in response to a request from an external management agent (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 40, Combs teaches a system for allocating an assignment in a networked computer system, the system comprising:

means for registering a plurality of high-availability-aware sees applications through an application programming interface; means for allocating roles to registered applications of the plurality of high-availability-aware applications by invoking a callback interface of the registered applications;

means for allocating the assignment to a first application selected from the registered applications based on application type information of the first application by

invoking a callback: interface of the first application; means for changing a role of the first application to primary by invoking a callback interface of the first application;

means for determining a redundancy level based on the application similar type information;

means for allocating the assignment to a predetermined number of secondary applications selected from the registered applications, based on application type information of the secondary applications wherein the predetermined number is based on the redundancy level by invoking a callback interface of the secondary applications;

means for changing roles of the predetermined number of secondary applications components to secondary by invoking a callback interface of the secondary applications, and

means for notifying the first application about the predetermined number of secondary applications by invoking a callback interface of the first application and the predetermined number of secondary applications components about the first application by invoking a callback interface of the secondary applications (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 41, Combs teaches a mechanism configured to manage a plurality of high-availability-aware as applications in a networked computer system, the mechanism comprising:

a mechanism configured to register through an application programming interface the plurality of high-availability-aware applications to be managed; and

a mechanism configured to dynamically allocate roles and assignments to registered applications of the plurality of high-availability-aware applications to achieve a desired redundancy level based on application type information by invoking a callback interface of the registered applications (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 42, Combs teaches the mechanism of claim 41, further comprising: at mechanism configured to respond to an error by changing roles and assignments of the registered applications by invoking callback interface of the registered applications (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 43, Combs teaches the mechanism of claim 41, further comprising:  
a mechanism configured to provide information to the registered . applications so that related applications among the registered applications may communicate to achieve the desired redundancy level (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 44, Combs teaches the mechanism of claim 41, further comprising:  
a1 mechanism configured to perform administrative actions on the registered applications response to a request from an external management agent (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

As to claim 45, Combs teaches the mechanism of claim 41, further comprising: at mechanism configured to maintain additional information relevant to managing the registered applications (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).



As to claim 46, Combs teaches the mechanism of claim 45, wherein the additional information includes information regarding software release domains, application relationships, and protection groups (see col. 9 lines 17-col. 10 lines 40 and col. 4 lines 1-40).

### ***Response to Arguments***

3. Applicant's arguments have been fully considered but are not persuasive. Applicant argues in substance that Combs does not disclose a proactive registration and allocation of applications to provide a redundancy level.

In response, Combs teaches a distributed Resource Allocator Handling System ("RAHS") coordinates resource allocation among multiple users, balancing the workload assigned to similarly capable resources, resolving contentions between users, and acquiring and maintaining information about the capabilities of the distributed resources. Because the RAHS comprises a number of identical separate processes running on two or more computers, the RAHS can survive individual process and machine failures, thus providing fault-tolerant resource allocation.

In addition, Combs teaches mirroring the RASA on a plurality of computer to receiver from failover and thereby achieving a level of redundancy (see col. 3 lines 53-col. 4 lines 15). Therefore Combs teaches a proactive registration and allocation of applications to provide a redundancy level.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein A. El-chanti whose telephone number is (571)272-3999. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571)272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

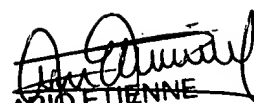
Hussein El-chanti

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ARIO ETIENNE  
PRIMARY EXAMINER